



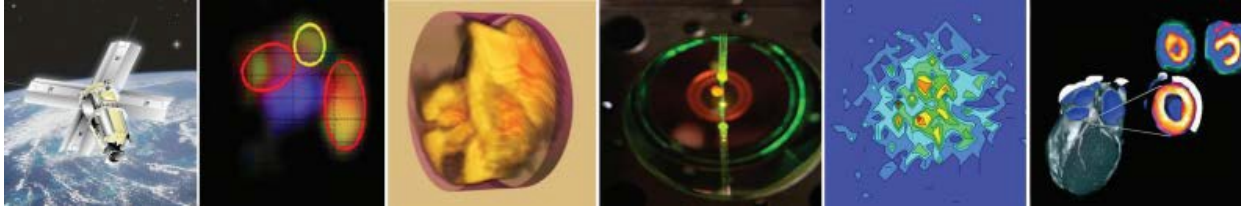
Engineering Institute
LANL • UCSD

2016 Science of Signatures Advanced Studies Institute

APPLY NOW

April 18 – May 6, 2016

A professional development opportunity for advanced Ph.D. students and postdocs interested in learning skills needed for research program development at National Laboratories/Academia.



Purpose: To invite a multi-disciplinary group of advanced, highly accomplished Ph.D. students and post-doctoral researchers from around the country to come to Los Alamos National Laboratory for an opportunity to generate novel, creative solutions to pressing national security problems and build the skills needed for successful research program development at national laboratories and in academia. This program will focus on introducing Advanced Studies Scholars to the process of writing winning proposals and securing research funding.

Program Focus: Scholars will work in multidisciplinary proposal teams of 3 to generate novel research solutions to the important challenges of forward deployment of advanced measurement technologies (Science of Signatures) research gaps related to pertinent national security challenges. Under the guidance of LANL mentors, the scholars will complete preliminary feasibility studies of their concepts and summarize their results in a proposal format. The scholars will present their proposals to a group of program managers for critique and feedback.

Benefit: Scholars' professional development will be enhanced not only by technical presentations and interactions, but also by advice and guidance from experienced researchers on how to develop research programs, write proposals, and secure funding. They will also have the opportunity to interact with multi-disciplinary researchers from around the country to facilitate future career opportunities and collaborations and they will have the opportunity to shape new fields.

Expenses will be paid for external candidates' travel, lodging, and subsistence for the duration of the program. **Advanced Studies Scholars must be U.S. citizens or permanent residents.**

How to Apply:

Interested applicants should download an application form from <http://asi.lanl.gov> and submit that with the following documents to SOS-ASI-Apply@lanl.gov:

1. **Resume**
2. **1-page cover letter** describing their interest in this summer school and multi-disciplinary, dynamic systems research as well as your near term (1-3 year) academic and professional goals
3. At least **one letter of recommendation**

Applications must be received by Feb. 7, 2016.
Acceptance notifications will be sent by Feb. 26, 2016.

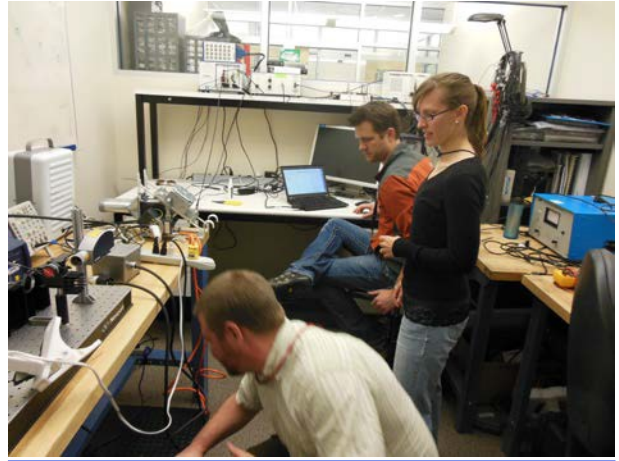
Please direct program content questions to SOS-ASI-Info@lanl.gov or
David Mascareñas (dmascarenas@lanl.gov)

Prior Projects from 2013

Program Overview: <http://www.youtube.com/watch?v=hq03MsP1MPI>



Remote Physical Sample Collection Using Unmanned Aviation Systems (UAS)



Characterizing the power grid



Novel methods for detecting small Unmanned Aviation Systems (UAS)



Novel signatures for characterizing chem/bio manufacturing facilities

Selected Technical Lectures from 2013

- Nuclear Detection (Karen Miller, NEN-1)
- Estimation of Electrical Load Dynamics (Scott Backhaus, MPA-CMMS)
- Biosensors: From the Bench to the Field (Harshini Mukundan, C-PCS)
- Statistical Electromagnetics (John Galbraith, P-21)
- Mobile Robots (Chris Ory, EO-ER)
- Bio-inspired Computing (Garrett Kenyon, P-21)
- History of the Los Alamos Neutron Science Center (LANSCE) (Dan Rees, AOT-RFE)

Selected Professional Development Lectures from 2013

- Evaluation of Past Proposals (Bill Priedhorsky, LANL LDRD)
- How to Build a Successful Research Program (Michelle Espy P-21)
- Fundamentals of Proposal Writing (David Clark, NSEC Division Leader)
- Transitioning from Student to Faculty (Mike Todd, Prof at UCSD)
- Building Effective Partnerships (Karl Jonietz, Former US State Department)
- The exciting outcomes and perils involved with STE consortia (José Olivares, Biology Division Leader)
- Lessons Learned in Building a Research Program in Academia (Donald Leo, Dean of the University of Georgia)
- Science and Technology Policy: How the programs we know get their start (John Szymanski, DSA-DO)
- Building a Start-up Company (Duncan McBranch, PADGS Global Security)